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"Circulated Everywhere Dyestuffs Are Used"

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THAT "TARIFF" BILL

Attempts to Make It Part of a General Revenue Program Are Unjust and Absurd—British Get Together and Present "Dyes" Bill

WHAT with so many topics of breathless interest, such as the doings of those who hope to ensnare Maeterlinck's Blue Bird through the enactment of Blue Laws, the progress of repairs to the windows and facade of the Union League Club in New York City, and —oh, yes!—and the recent efforts to legislate trousers onto the symmetrical but protesting frames of the Filipinos—it is a wonder that our public prints can still find space to talk about the Dye bill as tariff legislation.

For instance, along comes the Washington bureau of the New York *Tribune* with the following, culled from a general story on the convening of Congress:

"The backers of the dyestuffs tariff bill and several 'popgun' tariff bills now in the Senate will endeavor to pass them, but if passed they are likely to be vetoed."

Then there is Arthur Brisbane, unquestionably one of the most brilliant newspaper men of the day, who proclaims:

"Protect aniline dyes and other American industries, by all means. You can only do it with a tariff, and the same applies to the farmers."

Beyond a doubt Mr. Brisbane's heart is in the right place on this question; he has simply fallen into a popular error. His comment followed on the heels of President Wilson's last message to Congress, which contains at least a crumb of comfort, though likely to have little weight with our Solons at this stage of the game. However, the following portion of it should at least be made a part of the record of the industry's battle for protection:

"Permit me to emphasize once more the need for action upon certain matters upon which I dwelt at some length in my message to the second session of the Sixty-sixth Congress. The necessity, for example, of encouraging the manufacture

of dyestuffs and related chemicals. . . ."

It should be noted that this is the third time that President Wilson has so far departed from a basic principle of his own party as to recommend the enactment of a type of legislation for which one would naturally turn first to the Republican party, and which, in fact, was originally fathered by a Republican. This, on the face of it, makes the action of the *Tribune* correspondent in classifying it among those "popgun" bills "likely to be vetoed" if passed, seem sufficient evidence of reportorial carelessness.

Senator Penrose's unfortunate reference to the Dye bill when he was at one time denouncing the consideration of numerous "popgun" tariff bills gave birth to an error which persists to this day and which will likely continue in the minds of most of the general public interested in the doings of Congress. Yet the Dye bill is not a tariff bill, and an attempt to make the case of the industry a part of any general tariff program is as absurd as trying to settle California's Japanese controversy by taking it up as part of a blanket immigration law.

In spite of the fact that this has been repeatedly forced upon the attention of our Senators, both in committee hearings and on the floor of the Senate, we nevertheless observe Senator Curtis, of Kansas, a member of the Senate Finance Committee, blithely giving out an interview in which he shakes his head and explains how impossible it will be for the Dye bill to receive consideration, since he does not expect "any tariff or revenue legislation whatever this winter."

Then up pops Senator Moses, reelected from New Hampshire, who in his turn expresses grave doubts as to the chances of the dyestuffs protective bill this session, because, he declares, "there is a disposition to let the matter await the time when general tariff revision and tax and revenue readjustment is undertaken, probably at an extra session of Congress to be called next spring."

You see, whenever a few such remarks are gathered together and displayed collectively, how deeply-rooted is this weird notion about the purposes of that bill.

Senator Moses further stated, in an interview given to a representative of the *Oil, Paint & Drug Reporter,* that he had a confernece in Boston recently with Senator Lodge on the subject of dyestuff legislation, from which any definite conclusion failed to emerge. He renewed his declaration of war on the measure as it was passed by the House or reported by the Senate Finance Committee, but added encouragingly that he would not oppose enactment at the winter session if he were allowed to include his proposed amendment.

But quite naturally not! To include the Moses amendment would be very much the same thing as not passing the Dye bill, so far as securing any benefit to the industry is concerned. Scarcely anyone except the Senator himself needs another reminder that the members of the Tariff Commission, impartial, and knowing their subject thoroughly, declared this amendment "unworkable" even before it could be presented. Either the gentleman from New Hampshire still has faith that he can aid the textile industries and the dye industry by forcing his scheme upon them, or else he hopes to kill off any further attempts to create a self-contained industry here, once and for all. His persistent advocacy of the plan in the face of such testimony as he has received in the past argues strongly for one conclusion or the other.

However, since the bulk of the late news about the situation is mere gossip and speculation, there is little need of wasting further time upon it at present. What is a good deal more to the point just now is the fact that the British dye people have succeeded in bringing up their "Dyes" bill

before Parliament—which means that the three months' additional delay which it was feared would be the portion of the British industry if the measure could not be considered before Christmas, now no longer menaces, and that the British manufacturers—and the British public—will receive, it is more than likely, a neat little gift from John Santa Claus Bull in the form of real protection from the very real danger of renewed German domination.

Up to the time of writing, additional word as to the fate of the measure had not been received on this side of the water; but it should not be long in coming. One outstanding feature of the battle, however, was the fact that the manufacturers and users, as was the case here, were for a while unable to agree on certain provisions of the bill, but that when they realized that it was solely this disagreement and failure to present a massed attack that was preventing them from getting the attention which both wanted, they speedily patched up their differences and went ahead. Another respect in which the situation abroad was similar to our own was found in the presence of a number of well-meaning but misguided people who thought the Dyes bill ought to wait and be made part of the general anti-dumping legislation which Parliament is soon to take up. The error of this point of view was soon perceived by wiser heads, and the individuals referred to were not permitted to hinder.

This last is one respect in which the two situations are **not** analogous!

The Dyes bill, like the Dye bill, provides for licensing and a board. Instead of a body like our Tariff Commission, however, it will draw upon the British Board of Trade for its personnel. The members will consist of five men representing trades and industries using dyestuffs, three representing manufacturers of dyestuffs, and three not participating in either dye using or dye manufacturing enterprises. One of the latter is to be chairman, and will cast the deciding vote.

The sweetly solemn thought engendered by all this is that, having determined that their dye industry must be preserved at any cost, the British will now proceed to pass the bill, create the board and then stop worrying about the whole affair—just like that. Whatever criticisms may be hurled at it for other actions or lack of actions, at least it must be conceded that Parliament, having been apprised of this necessary piece of work to do, will DO it and not spend from eighteen months to two years in beating about the bush and accomplishing anything in the world but tangible results.

Many Americans, not having enjoyed the advantages of travel, nor of meeting many representatives of this race, to-day look upon the British as inclined to be "slow." And the lesson which all good little boys and girls of this persuasion may glean from the week's news is that the Brit-

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ish are certainly very slow to let some foreign power come along and take away something which the British want for themselves.

Given the same kind of protection which the British are about to receive, American dye manufacturers can beat our Anglo-Saxon cousins "all hollow" and challenge the world. So can our textile manufacturers. But it all rests upon protection, and in the case of the dye industry any kind of "protection" other than licensing is no protection at all.

PRESIDENT-SELECT HARDING FOR CHEMICAL INDEPENDENCE

President-select Harding declares for the chemical independence of the United States, as a result of the World War, in a letter made public in the December number of the *Journal of Industrial and Engineering Chemistry*.

The message, which was sent in acknowledgment of an invitation to attend the National Exposition of Chemical Industries, is as follows:

Marion, Ohio.

Mr. Charles H. Herty,
Chairman Advisory Committee,
National Exposition of Chemical Industries,
New York City, N. Y.

My Dear Mr. Herty:

I beg to acknowledge, with thanks, your letter inviting me to attend the Sixth Annual Exposition of Chemical Industries. If my engagements permitted I would be more than glad to accept, for I am really tremendously interested in the work and progress that will be represented at the Exposition. The war taught us what we needed to make us truly a self-sustaining, independent nation and much will depend upon the success of our chemical engineers and producers to remedy the deficiencies which then became more impressibly apparent. May I ask you to convey to the members of your committee my thanks for the courtesy of the invitation and the regret of my inability to make acceptance.

With best wishes for your success, I am,

Sincerely yours,
(Signed) W. G. HARDING.

In view of the monopoly which Germany had on many chemical products, especially dyes, before the European war, the statement made by Senator Harding is deemed of prime importance by the chemists of the United States.

DYE PRODUCTION COSTS IN NEW TARIFF REPORT

Activities of Foreign Textiles Reported by Special Investigators

The United States Tariff Commission has made its fourth annual report to Congress covering the fiscal year 1919-1920.

The Commission renews its recommendations concerning interim legislation, customs administrative laws, foreign trade zones, dumping and unfair competition in the United States, and reciprocity and commercial treaties.

The work of the Commission during the year has been in part a series of studies of the commodities provided for in the tariff acts of October 3, 1913, and September 8, 1916. Broad surveys have been made of industrial conditions in the United States, and in several fields investigations have been extended into foreign countries. As a result of the investigations the Commission has issued reports upon the economic status of a number of industries; for others, unpublished surveys between one and two thousand in number, are in its files ready to be put at the disposal of Congress when tariff legislation shall be under consideration.

The scope of the Commission's work may be briefly outlined by the following synopsis of the subjects which have been given detailed study: agricultural products, including vegetable oils and fats; dairy

products, starches and starch materials, fish, oysters, and other shellfish; chemicals, such as the barium chemical and lithopone industries, crude botanical drugs, incandescent gas mantles, dyes and other coal-tar chemicals, including a study of the cost of production in the dye industry; metals and minerals, especially those affected by war conditions; sugar, molasses and their manufactures; the textile industries, including cotton, flax, hemp, jute and wool manufactures, silk and silk goods; the wool-growing industry; wood and wood manufactures; paper and books; earths, earthenware and glassware, and sundries.

Foreign investigations were conducted in Great Britain and Japan, and were concerned with the British wool manufacturing industry, the British metal and chemical industries, and general industrial conditions in Japan. Data concerning silk production and manufacture in France, Italy and Switzerland were secured by a special agent with a view to ascertaining what changes have occurred in international competition since 1914. The Commission has completed reports on the colonial tariff policies of France, Germany, Italy, Spain, Portugal, the Netherlands, Belgium, Great Britain, Japan and the United States. A unique volume about to be published by the Commission is a digest of the commercial treaties in force between all nations at the outbreak of the war in 1914, as well as those that have been concluded since that date. This is the first official compilation of any government which gives a synopsis of the world's commercial treaties, conventions and tariff agreements. A report on Canadian reciprocity, prepared at the request of the Committee on Ways and Means, is especially opportune at this time because of the contemplated revision of the tariff of the Dominion of Canada.

BLEACHING WITH THE PEROXIDES

By J. L. Girard

A general description of the manufacture of peroxide of hydrogen will now be given, as it is well for the bleacher to have a knowledge of the product, particularly in connection with possible impurities arising during its manufacture.

Peroxide of hydrogen is a rather unstable compound, especially in the presence of alkali, when it decomposes slowly, giving out nascent oxygen. Its use as a bleaching agent is based on this property. A number of substances, especially certain heavy metallic salts, have the property of greatly increasing the speed of this decompositon, even when only traces of them are present. Among these substances are barium compounds which serve as raw materials for the manufacture of peroxide of hydrogen, their accidental presence or incomplete elimination being the

(*Continued on page* 11.)

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$45,000,000

Twenty companies with an authorized capital of $50,000 or greater were incorporated during November to engage in the manufacture and for the distribution of chemicals, drugs, dyes and medicinal products, as compared with fourteen in the preceding month. More important evidence of the revival of interest in this form of enterprise is to be found in the aggregate authorized capital involved in the organization of these concerns, which amounted to $50,050,000, the largest total for any month within the last two years. This figure compares with $4,825,000 in October, and with $6,690,000 in November a year ago. Comparisons would not be fair, however, without pointing out that $45,000,000 of the aggregate was furnished by one company, the other nineteen contributing the remaining $5,050,000.

The indicated investment in chemical, drug and dye companies during the first eleven months of 1920 appears as $230,517,000, a figure which is already more than $80,000,000 above the aggregate rolled up during any complete year in the life of the compilation which has been maintained by the *Journal of Commerce* since the outbreak of the war in 1914. The previous record was achieved in 1917, when under the impetus of meeting the requirements incident to America's entry into the conflict, an aggregate of $146,160,000 was rolled up.

The chemical and allied industries, as a whole, are looking forward with a greater degree of confidence to the enactment of protective legislation than ever before, and it is at last beginning to be felt that the time for results is close at hand. The delay in action upon measures which these industries have been urging is held responsible, in large degree, for the failure of even greater developments than those which have been reported, although temporarily the readjustment common to all industry is believed a factor.

Two of the companies organized last month had an authorized capital of $1,000,000 or greater, against only one in October. Four concerns of such proportions were incorporated in September, four in August, five in July, five in June, one in May, one in April, eight in March, three in February and nine in January. The total number organized to date this year is forty-three.

Taken as a single concrete example, the $45,000,000 Allied Chemical & Dye Corporation, which will officially come into being with the first of the new year, represents the greatest exhibition of brute strength yet displayed by the American dye industry. Yet $45,000,000 corporations are not objects of especial note in these United States, and those who refer to the American dye industry as an infant industry do so rightly. This corporation should be a strong bulwark against the assaults of foreign competition, but without protection it can yet wither and dry up. Big and powerful as it seems, it is by no means a match for the German kartel—but it and others can be made so. There are numerous men in the country to-day who could individually buy and sell this corporation.

Let the Senate remember this when next someone tries to show how huge and powerful the American dye industry is waxing. When the industry really gets to a point where it can snap its fingers at the kartel, then it can be regulated so as to protect American dye users from its machinations, if any.

Which is considerably more than could be done in the case of a foreign combine of similar proportions.

BLEACHING WITH PEROXIDES

(*Continued from page 9.*)

cause of difficulties in the use of this bleaching agent.

Peroxide is manufactured by various methods, which may be divided into two classes:

(1) Reaction of peroxides on dilute acid.

(2) Electrolytic process.

So far as I have observed, the first method is the only one employed on a large scale. The electrolytic process is still of recent origin, but its superior advantages may lead to its substitution for the first method.

The reaction of peroxides on the acids led in 1818 to the discovery of peroxide of hydrogen by Thenard. His method of procedure was as follows:

The peroxides generally do not possess basic properties, which, however, are possessed by the oxides composed of a smaller proportion of oxygen, that is, the protoxides.

If a peroxide is brought in contact with dilute acid, it loses a part of the oxygen and is transformed into a protoxide possessing basic properties, unites with the acid to form a salt, while the liberated oxygen can, in conformity with the conditions of the experiment, either pass into a gaseous form or combine with the water used to dilute the acid and form peroxide of hydrogen.

The conditions required for the fixation of the oxygen are:

(1) Fairly dilute acid as a medium.

(2) A low temperature.

(3) The absence, or at least the presence in but a small quantity, of various impurities capable of causing the decomposition of H_2O_2 and the escape of the oxygen.

It is also important that the salt, which is the by-product, be easily and completely removed, and, for this purpose, that it also be as insoluble as possible.

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In practice two peroxides are used:

(1) Bioxide of barium BaO_2, obtained directly by heating the protoxide BaO in a current of air.

(2) Peroxide of sodium Na_2O_2 obtained by the direct oxidation of sodium in contact with air at about 580 deg. Fahr.

This last method should not be confused with the direct use of peroxide of sodium for bleaching.

Peroxide of hydrogen is made with bioxide of barium by the following operations:

A cement tank holding 1,100 pounds (132 U. S. gals.) of water, the liquor heated in a separate wooden tank from which it passes to the cement tank. The tank is filled with 1,100 pounds of cold water to which is added the required amount of sulphuric acid and 2.2 pounds of concentrated phosphoric acid at 60 deg. Be., the latter having the property of stabilizing peroxide of hydrogen.

The bioxide of barium is now added slowly in sufficient quantity to disengage 176 cubic feet of active oxygen; that is, to convert all the water in the tank into a 10-volume solution of peroxide of hydrogen. The quantity of bioxide varies with the proportion of pure BaO_2 present. The quantity of sulphuric acid is that necessary to saturate all of the BaO_2 plus an excess of 0.55 pounds or 1 part in 2,000 parts by weight. Now 0.96 pounds of pure BaO_2 yields 0.091 pound or 1 cubic foot of oxygen and requires 0.557 pound of pure H_2SO_2 for its saturation.

The mixture must be stirred continually during this reaction, for the bioxide of barium is very dense and dissolves very slowly. For this reason it is necessary to keep it in suspension in the liquid by mechanical means in order to secure the complete reaction.

The heat generated by the saturation of the acid by the barium can be absorbed by cooling. Formerly it was the practice to dampen the bioxide of barium while adding it to the water. At the present time it is sprinkled in the acid solution.

The speed of the reaction is controlled so as to prevent heating. In practice it is very difficult to avoid the escape of a small amount of gas caused by a waste of oxygen.

When the reaction is completed the mixture is allowed to stand and become clear. The deposit of sulphate of barium falls to the bottom and the peroxide of hydrogen is removed by a siphon or a draw-off pipe at the side of the tank. This peroxide of hydrogen can be used for bleaching. If it is to be stored for future use, it is well to subject it to a process of purification to remove various impurities coming from the bioxide of barium, particularly oxide of iron. The last-named compound and the oxides of manganese are the most active agents of decomposition. Furthermore, the liquid must not come in contact with any iron during these operations. This point will be considered further when the defects in bleaching are taken up.

The above described process is the earliest one used, and it is the one by which the greater part of peroxide of hydrogen is still produced.

During the past twenty years peroxide of sodium has been used for the manufacture of peroxide of hydrogen, but here it is impossible to use sulphuric acid, which forms sulphate of soda as a by-product, which is soluble and therefore cannot be removed from the peroxide of hydrogen. It is therefore necessary to use an acid forming a practically insoluble salt. Now the insoluble salts of soda are rare, the one that is used being the double fluoride of sodium and aluminum $Al_2Fl_6 + 6NaFl$.

The peroxide of sodium is dissolved at a low temperature in a dilute solution of hydrofluoric acid containing fluoride of aluminum. The latter unites with the flouride of sodium which is produced to produce the insoluble double salt which precipitates as fast as it is formed.

The flouride of sodium, slightly soluble itself, can be separated partially in a pure state. This is a valuable product for preserving wood.

The electrolytic process is in its early stage. The form in which it has been

most successful consists in first preparing persulphuric acid by the electrolysis of concentrated sulphuric acid. This product distilled in vacuo separates into sulphuric acid and peroxide of hydrogen very concentrated and very pure, which is in turn separated from the acid. The product thus obtained is much superior to that obtained by the old methods in respect to concentration and purity.—*Textiles.*

ASSAM INDIGO, LTD., TO COMPETE FOR TRADE IN FAR EAST

W. A. Davis, indigo research chemist to the Government of India, reports that indigo in Assam gives extraordinary high yields of plant per acre as compared with those obtained in Bihar. Indeed, the yields to be expected in Assam are even greater than the 30 to 40 seers of cake indigo per acre obtained in Bihar when the Java plant was first introduced, and which have again recently been obtained on a few estates under proper manurial treatment. At several places in Assam where indigo has been grown during the past few years it has given quite extraordinary yields of plant—sometimes 300 to 400 maunds of green plant per acre in a single cutting. It gives, too, surprising yields of seed—10 to 15 maunds per acre. In Bihar, owing to soil deterioration, the plant seldom gives more than 50 to 100 maunds of green plant per acre in a whole season, while indigo seed can no longer be grown there and planters have had to rely on supplies of outside seed.

In the past four years, from 1916-17, the average number of seers of cake indigo produced per acre in Bihar has been 7½, 6½, 5½ and 8. The acreage has declined from 86,700 in 1917-18 to 57,100 last season. In Assam, on the other hand, the plant not only gives very big yields but a high percentage of indigotin in the leaf. Some plants analyzed last year, rather late in the season, and just before seeding, when the quality had slightly deteriorated, contained 60 per cent of leaf and 0.7 and 0.8 per cent of indigotin in the leaf (two different fields). Mr. Davis considers that with plants specially grown for mahai, and cut at the proper time, it would be reasonable to expect 60 per cent of leaf and 1 per cent of indigotin in the leaf.

With this basis of calculation the probable yields per acre of cake indigo work out, with yields of 200 maunds of plant per acre, at 56 standard seers; and with 300 maunds of plant per acre at no less than 84 standard seers, or more than 10 times the highest average yield obtained in Bihar in the best of the last four years. In this estimate Mr. Davis allows for a probable 30 per cent loss of indigo in manufacture by the ordinary Bihar process.

A good deal of experimental work has been done by Mr. and Mrs. L. G. Tunstall, who have been in the service of the scientific department of the Indian Tea Association, and for some years a seed indigo business has been carried on by Mrs. Tunstall and C. W. B. Taylor under the name of the Jorhat Indigo Syndicate. A company under the name of Assam Indigo, Ltd., is being formed with a capital of Rs. 15 lakhs. In addition to the indigo business, it is proposed to manufacture indigo dye in the form of paste, for which an unlimited demand exists in

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China and the Far East. On behalf of the managing agents the Government of India arranged for Mr. Davis to visit China and Japan, where trials were made with a form of paste indigo developed at the Agricultural Research Institute at Pusa. The trials were entirely satisfactory, and when they were made last November the selling value of the paste in China was equivalent to Rs. 640 per maund of 60 per cent indigo, as against a Calcutta selling price of Rs. 360 for ordinary cake indigo.

ALLIED CHEMICAL & DYE CORP. HERE ON JAN. 1

Announcement has been made by the committee in charge of the consolidation of the General Chemical Company, Solvay Process Company, Semet-Solvay Company, Barrett Company, and the National Aniline & Chemical Company, Inc., that the merger plan has become operative and that it is expected to be carried into effect as of January 1, 1921. Temporary stock certificates for the new stock, preferred and common, will be ready for distribution about January 6, 1921.

The proportions of the outstanding stocks of the consolidating companies, which are now under the control of the committee, subject to the plan and agreement are as follows: General Chemical Company, preferred stock, 92.71 per cent, and common stock, 95.83 per cent; Solvay Process Company, common stock, 99.22 per cent; Semet-Solvay Company, common stock, 97.01 per cent; Barrett Company, preferred stock, 93.78 per cent, and common stock, 95.14 per cent; National Aniline & Chemical Company, Inc., preferred stock, 90.35 per cent, and common stock, 98.18 per cent.

ANTHRACENE BLUE IS NOW BARRED OUT BY W. T. B.

The War Trade Board in a letter to Benjamin F. Lippold, head of the Acme Dyestuff Company, announces that importations of Anthracene Blue will be immediately discontinued. No further licenses for the importation of this German color will be issued unless the firms desiring to bring it in submit proofs that the American color of the same name is not of equal quality with the German color. Anthracene Blue is being produced by the Acme Company at the rate of approximately 1,000 pounds per day and at a price which the officials of the War Trade Board deem reasonable. In the latest bulletin of the Textile Alliance, Inc., which is handling imports of dyes, it was announced that 70,000 pounds of the color were available for importation. Any part of this supply which has not yet been shipped will not be forwarded from the German factories. The color produced by the Acme Company is said to be fully equal to the old German shade and when this was brought to the attention of the War Trade Board by Mr. Lippold an order stopping its importation was issued.

DU PONT HAS NEW STOCK SUBSCRIPTION PLAN FOR EMPLOYEES

E. I. du Pont de Nemours & Co. have announced a new plan for stock subscription by employees. The board of directors of the company has modified the former plan for stock subscription which has been in effect since 1909 and has made important changes for the purpose of providing an opportunity for employees to invest their surplus earnings in such a way as to share in the profits of the company while enjoying the security afforded by the debenture stock. Employees who become stockholders under this plan will receive not only a fixed cumulative dividend on their stock, when declared, but also a participating payment at a rate increasing with the net earnings of the company and also a service payment based upon the length of service credited to them.

The plan for the participating payments based on the net earnings of the company provides that if the net earnings were at a rate equal to or greater than 8 per cent but less than 9 per cent per annum on the combined total invested capital, the participat-

ing payments will be at a rate of $1 per share per annum.

The payments increase as the earnings increase, until if the net earnings were at a rate equal to or greater than 12 per cent the participating payments will be at the rate of $5 per share per annum. The rate of service payments will be based on the years of continuous service with the company and will be made on the following basis: For length of service of one year and less than two years, $1 per share per annum; for a service of two years and less than four years, $2 per share per annum; for a length of service of four years and less than seven years, $3 per share per annum; and for a length of service of seven years or over, $4 per share per annum.

Under this plan, therefore, if a participant has been in the service of the company for seven years or more, and if the company's net earnings for the preceding year were at a rate of 12 per cent or more on its combined total invested capital, subject to the declaration and payment of the regular cumulative 6 per cent dividend, such employee will receive in all 15 per cent, or $15, for the following year on each share of this debenture stock.

Any eligible employee may subscribe to an amount of this stock equivalent to not more than four times his monthly rate of salary or wages, but in no case to more than twenty shares. The plan provides that the stock must be paid for within one year. Those who desire to have their stock redeemed can do so under certain conditions. The stock will be redeemed by the company at $100 per share.

L. J. KNOWLES

Lucius J. Knowles, president of the Crompton & Knowles Loom Works of Worcester, a leading business man of that city, passed away in London, England, at the age of 41 years, just prior to his intended sailing for the United States. Mr. Knowles was born in Worcester, April 6, 1879, and was named after his uncle who, with his father, started in 1866 the manufacture of looms in a little shop in Allen Court, which afterward developed into the present business enterprise for which the plant at Grand and Tainter Streets was built in 1890.

Mr. Knowles was a director of the Merchant's National Bank, of the Judson Mills, Greenville, S. C., and of the Bancroft Realty Company, trustee of the Burnside Associates, and managing trustee of the Knowles Building. He was also a member of various social and athletic clubs.

DR. GUSTAVE DROBEGG

A wide circle of friends of Dr. Gustave Drobegg in the dye manufacturing industry, as well as in the machinery and supply field, were shocked early last week to learn of his death, which occurred in the Swedish Hospital, Brooklyn, Monday evening, December 6. Funeral services were conducted Wednesday evening in his home, 179 Rutland Road, Flatbush, and interment took place on Thursday morning. He was in his sixtieth year.

Dr. Drobegg was for twenty-five years connected with the firm of Charles Pfizer & Co. and later was for several years chief chemist for the Dyestuff Division of the Butterworth Judson Corporation, for which organization he superintended the installation of the dye works. He was born in Coblenz, Germany, and was a student at the University of Munich, where he specialized in chemistry. He came to this country in 1886.

Dr. Drobegg, whose activities in help-

Cotton Bleachers Use
B & L Bleaching Oil
to produce a foundation
For a Pure White, and
B & L Anti-Chlorine
to neutralize chlorine
Bosson & Lane
Works and Office, Atlantic, Mass.

ing to create the American dye industry during the war period are well known, was a member of the Chemists' Club, New York; the German-American Druggists' Association, and the Society of Chemical Industries.

NATIONAL RESEARCH COUNCIL HAS SITE FOR NEW WASHINGTON HOME

A site for the new building in Washington, D. C., which is to serve as a home for the National Academy of Sciences and the National Research Council has recently been obtained. It comprises the entire block bounded by B and C Streets and Twenty-first and Twenty-second Streets, Northwest, and faces the Lincoln Memorial in Potomac Park. The Academy and Council have been enabled to secure this admirable site, costing about $200,000, through the generosity of the following friends and supporters: Thomas D. Jones, Harold F. McCormick, Julius Rosenwald and Charles H. Swift, Chicago; Charles F. Brush, George W. Crile, John L. Severance and Ambrose Swasey, Cleveland; Edward Dean Adams, Mrs. E. H. Harriman and the Commonwealth Fund, New York City; George Eastman and Adolph Lomb, Rochester; E. A. Deeds and Charles F. Kettering, Dayton; Henry Ford, Detroit; Arthur H. Fleming, Pasadena; A. W. Mellon, Pittsburgh; Pierre S. du Pont, Wilmington; Raphael Pumpelly, Newport; Mr. and Mrs. H. E. Huntington, Los Angeles; Corning Glass Works, Corning, N. Y. Funds for the erection of the building have been provided by the Carnegie Corporation of New York.

The *Pro Belgica*, referring to the German chemical industry, particularly the Rhenish section, states for the region of Crefeld there are twenty-two factories and about 2,600 employees, for that of Aix la Chapelle, ten factories, 1,798 workmen; for that of Cologne and Treves, twenty-three factories and 16,000 workmen; for Mayence, thirty-two factories and 15,500 workmen; for the region of Ludwigshafen eleven factories, 16,000 to 17,000 workmen. The Badische Company employs 13,750 workmen, uses 124,000 horsepower and has a monthly production of 24,332 tons of various chemical products. The Meister, Lucius & Bruning plant at Hoechst employs 10,000 workmen and manufactures 300 tons of heavy chemicals in addition to their production of dyes.

Dye-a-Grams

Times have changed considerably. The young girl who in days gone by went to bed with a warm flatiron at her feet now wears low shoes when the snow flies.

—o—

If there were a law against drinking water, no doubt there are some people who would prefer it to ———.

—o—

"National's Diazine Black D R Is interesting to Hosiery Dyers"—*Reporter headline.* As far as hosiery dyers go, the "D R" in this case stands for "D—— Right!"

—o—

We de not hear so much of booze thefts—since the Supreme Court legalized the removal of same!

—o—

We recently received a letter stating that the New England textile industry was "tinted indigo." Too bad it wasn't Indigotine; there might be some chance of an early change!

—o—

Now that the mills are shut down, no doubt a lot of them have plenty of $18-a-ton coal on hand.

—o—

The Canadian border is designated as "the far-flung bottle line." We imagine some of it gets flung as far as New York.

—o—

Dear Ed.: We note that you state, "Unbiased contributions appreciated." We wonder if you imagine for one minute that there is anything "on the bias" in the industry!

G. E. T.

CANADIAN COTTON TEXTILE INDUSTRY FOR 1919

A preliminary report on the cotton textile industry in Canada for the calendar year 1919 has been completed by the Dominion Bureau of Statistics covering the operations of twenty-seven plants, distributed by provinces, as follows: Quebec, 12; Ontario, 11; New Brunswick, 3, and Nova Scotia, 1.

The aggregate capital invested in the industry in 1919 was $58,732,941, of which $37,962,311 was in the province of Quebec, $13,632,846 in Ontario, $4,636,587 in New Brunswick and $2,501,179 in Nova Scotia. The distribution of capital by items was as follows: Land, buildings and fixtures, $14,016,973; machinery and tools, $21,200,219; materials, stocks in process, finished product, fuel and miscellaneous supplies on hand, $12,022,193, and cash, trading and operating accounts, $11,493,556.

The number of persons at employment during the year are presented in the following summary table by classes and by sex:

Classes of Employees	No. of Employees Male	Female	Salaries and Wages
Officers, superintendents and managers...	74	....	$386,760
Clerks, stenographers and other salaried employees	217	74	471,758
Employees on wages, average number....	8,428	7,331	10,122,573
Total	8,719	7,405	$10,981,091

The total value of the fuel used in the industry during the year was $1,058,960. The quantities and values of the principal fuels were: Coal, 138,764 tons, worth $1,039,146; Coke, 1,571 tons, worth $18,354; gasoline, 10,652 gallons, worth $3,812; oil for fuel, 45,820 gallons, worth $5,989, and gas, 813,000 cubic feet, worth $659.

The total charge for the items of miscellaneous expenses for the year was $7,887,337, comprising cost of offices, works and machinery, $316,165; rented power, $468,234; insurance premiums, $124,339; taxes—municipal, provincial and Federal—$574,654; advertising expenses, $18,864; traveling expenses, $134,713; repairs to buildings and machinery, $2,784,328, and all other sundry expenses, $3,467,040.

CHINESE INDIGO CROP NORMAL, DESPITE FLOODS

Reporting on Chinese summer crops, Consul Myers, of Swatow, states that the indigo crop was normal, though it suffered from floods along the lower reaches of the Han River. Current prices for liquid indigo range between $3 and $4.50 per picul of 133 1/3 pounds, according to quality. This product is chiefly exported to other parts of China for use in the native dyeing industry. The export of 3,250,000 pounds of indigo in 1913 was valued at only $49,959, while the export in 1919 of 3,750,000 pounds reached a value of $328,930, indicating the great advance during the war. Exports during the first half of this year totaled 1,404,533 pounds, as compared with 525,333 pounds for the same time last year.

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Full line of Acid, Direct and Basic Colors
Special line of
Alizarine Colors
to stand fulling, light, etc.
OUR LABORATORY IS ALWAYS AT YOUR SERVICE

NOTES OF THE TRADE

Under the laws of New Jersey the Brawer Silk Company has been incorporated with a capital of $125,000. Headquarters will be located in Paterson, and the incorporators consist of Arthur, Abraham and David Brawer.

J. Pfister, of the dyestuff house of Wetterwald & Pfister, New York City, representatives of the Swiss firm of that name, is spending a four months' business trip in investigating the dyestuff markets of China and Japan with an eye to establishing relations with some of the leading houses of the Orient.

The United Indigo & Chemical Company, Boston, Mass., in its annual report, gives its assets as $1,775,317. The officers of the company are: President, George Heywood, Manchester, England; Secretary, F. Williamson, Cheshire, England, and Directors. Joshua Beardsley, Joseph Taylor and Frank Heywood.

Under the laws of Massachusetts, the Textile Felt & Fabric Company has been incorporated. The capital of the new enterprise is $10,000 and headquarters will be located in Boston. The company will manufacture and deal in cotton, wool, silk, flax and all goods made from same.

At Troy, Ala, about $125,000 has been raised for the establishment of a cotton mill in that city. The committee includes Prof. M. D. Pace, of Troy, and Superintendent Howard, of the Union Springs Cotton Mills. It is said that the Atlanta Textile Machinery Company is one of the large stockholders in the undertaking.

Alkali Blue 6B

R. LECHNER CO., INC.
110 East 23d Street New York

Finland imported $112,566 worth of coal tar dyestuffs during September, while the total importation of drugs and chemicals during the same period amounted to $601,864.

British Patent 135,748 describes a method of regulating the amount of moisture sprayed upon fabrics by means of a scale operated by the variation in weight of the textile under treatment due to the degree of saturation of the atmosphere to which it is exposed.

U. S. Patent 1,337,673, issued to Edward J. Wall, assignor to Kalmus, Comstock & Westcott, Inc., describes a method of recovering dye from a solution by the introduction of finely divided cellulose matter into the solution, so as to absorb the dye, and subsequently subjecting the cellulose matter to the action of a dye solvent, thereby extracting the dye.

Recent published opinion of a dyestuff producer was to the effect that buying would start about March 1. Stating that the textile mills have, in a majority of cases, no reserve stocks of dyes on hand, the demand would begin to be felt because by that time the shelves of the retailers would be bare and orders would be received by the mills in sufficient number to warrant their resuming operations. This is not in accord with the frequently expressed view that activities will begin to speed up after the first of the year.

For the first time since the war began, quantities of pure Gurman indigo have reached Japan, thereby proving a serious menace to Japanese sulphur black, which has for some time been used as a substitute. The yearly capacity of the Japanese sulphur black manufacturers is 40,000,000 kin, but the actual output for the period from November, 1919, to April, 1920, amounted to 6,300,000 kin, of which 60 per cent has been consumed in Japan and 40 per cent has been shipped to China.

The heart of the American Dyestuffs Industry, the Deepwater Works of the Du Pont Company at Deepwater Point, New Jersey.

Building for permanence and not to meet a wartime emergency, our vast Deepwater Plant is the visible pledge of the Du Pont Company to America that her dyestuffs needs will be met, no matter what the situation without her borders.

From the research laboratory, through every phase of manufacture back to the checking laboratory, adequate facilities, involving a tremendous investment, are provided for large scale production of the essential dyestuffs required by the textile manufacturers and other dyestuffs consuming industries.

E. I. du Pont de Nemours & Co., Inc.
Sales Dept., **Dyestuffs Division**
WILMINGTON, DEL.

DU PONT DYESTUFFS

"NATIONAL DYES ARE NATIONAL ASSETS"

NATIONAL U.S.A. DYES

A Recent Addition

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"National" Erie Violet 2 B

which yields rich violet shades with a distinct bluish tone, possessing good fastness to light.

Excellent indigo shades of very good fastness to washing, are obtained upon cotton and other vegetable fibers, by diazotising and developing with "National" Developer B.

"National" Erie Violet 2 B is also successfully used for dyeing cotton and wool and cotton and silk mixtures.

Full detailed information together with sample dyeings, or dyeings on customer's material, will be furnished upon request.

National Aniline and Chemical Co. Inc.

General Offices: 21 Burling Slip, New York

QUALITY